

PATENT SPECIFICATION

(11) 1 433 204

1 433 204

- (21) Application No. 35229/73 (22) Filed 24 July 1973
 (31) Convention Application No. 2 236 853
 (32) Filed 27 July 1972 in
 (33) Germany (DT)
 (44) Complete Specification published 22 April 1976
 (51) INT CL⁷ B65G 15/42; B32B 3/30, 5/18; B65G 15/14
 (52) Index at acceptance
 B8A 1H3A1 1H7
 B2E 178 318 360 44Y 467 489 519 65Y 677
 B5N 0330 0518

(19)



(72) Inventors GERT BECHTLOFF and REINHOLD SZONN

(54) A COVER BAND CONVEYOR

(71) I, GERT BECHTLOFF, a German Citizen, of Brucknerstrasse 24, 294 Wilhelmshaven, Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a cover band conveyor having two conveyor belts which contact one another over a part of their conveying part and which run in synchronism, at least one of the belts being provided, on its conveying side, with a thick elastically deformable layer, of foam material or the like, having a profiled surface, on the side thereof adjacent the other belt, which envelops goods to be conveyed.

In a known conveyor of this type, the profiled surface has individual, knob-like prominences arranged in rows and formed by a fairly thick outer skin of the foam material layer.

This has the disadvantage that, as a result of the profiling structure, the fairly thick outer skin of the foam material layer expands only poorly, whereby both the conveying of fairly fine and, particularly, of coarse material is made difficult.

An object of the present invention is to provide a cover band conveyor wherein the above mentioned disadvantage is obviated or minimised and which can be used for vertical or near vertical conveying.

Accordingly the invention provides a cover band conveyor having two conveyor belts which contact one another over part of their conveying paths and which run in the same direction, at least one belt being provided, on its side adjacent the other belt, with an elastically deformable layer of resilient material, such as foam material, which can envelop goods to be conveyed and which layer has, on its side adjacent the other belt, a profiled surface which is expansible in the longitudinal and

transverse directions of the one belt, the profiled surface being made up of transversely extending wave-like ribs.

The surface structure of the belt can be drawn apart and pushed together again in bellows-like or concertina-like manner in two directions.

The surface of the layer can be in the form of a reinforcing skin applied to the foam material layer. The skin can be a fairly strongly compressed skin of the same material as the foam material layer. It is advantageous and expedient if the foam material layer and the skin are of polyurethane. More especially in this case, the skin can be a tenacious, thick sprayed-on or integrally moulded skin.

If a close succession of individual ribs is desirable, particularly if the goods that are to be conveyed necessitate this, it is advantageous if the ribs are arranged one behind the other on the layer.

In order to produce the corresponding waviness, it is advantageous if the ribs are rounded-off at their outer edges and are connected to the foam material layer in such a way that rounded-off wave shaped valleys are produced between the ribs.

The invention will be described further, by way of example, with reference to the accompanying drawings, wherein:—

Fig. 1 is a perspective view of a portion of a belt of a preferred embodiment of conveyor conforming to the invention; and

Fig. 2 is a cross-section taken on the line II—II of Fig. 1.

Fig. 1 shows, in plan view, a portion of a belt of a preferred embodiment of conveyor conforming to the invention. In this belt a profiled surface consists of ribs 7 which are sinusoidal or wave-shaped in form and extend transversely of the belt. The crests of the "waves" lie in a plane parallel to the belt plane. As shown, the ribs 7 are arranged one behind the other on the foam layer 2 at a spacing A and are associated with one another in such a way that the waves 7a of

BEST AVAILABLE COPY

consecutive ribs 7 are in line.

Fig. 2 is a section taken on the line II—II of Fig. 1 and reveals that by the arrangement of several ribs one behind the other waves are also formed longitudinally of the belt also formed, which waves consist of the ribs 7 and the troughs 8 lying therebetween. As shown, the ribs 7 can be rounded-off at their outwardly lying edges 9 and at the troughs 8 lying therebetween in such a way that a uniform corrugation arises, i.e. the cross-section through the waves has a smooth curve, for example sinusoidal.

15 WHAT I CLAIM IS:—

1. A cover band conveyor having two conveyor belts which contact one another over part of their conveying paths and which run in the same direction, at least one belt being provided, on its side adjacent the other belt, with an elastically deformable layer of resilient material, such as foam material, which can envelop goods to be conveyed and which layer has, on its side adjacent the other belt, a profiled surface which is expansible in the longitudinal and transverse directions of the one belt, the profiled surface being made up of transversely extending wave-like ribs.

20 2. A conveyor as claimed in Claim 1, wherein the profiled surface has a reinforcing skin applied to the resilient material layer.

35 3. A conveyor as claimed in Claim 2, wherein the resilient material is a foamed

material and the reinforcing skin is a denser skin of the same material as the foam material.

4. A conveyor as claimed in Claim 3, wherein the foam material layer and the skin are of polyurethane. 40

5. A conveyor as claimed in Claim 3 or 4, wherein the skin is a tenacious, sprayed or integrally formed skin of the foam material.

6. A conveyor as claimed in Claim 1, wherein the tops of the ribs lie in a plane parallel to the plane of the belt. 45

7. A conveyor as claimed in Claim 6, wherein the ribs are arranged one behind the other on the foam material layer at such a spacing and are associated with one another in such a way that the waves of consecutive ribs intermesh. 50

8. A conveyor as claimed in Claim 6 or 7, wherein the ribs are rounded-off at their crests or outer edges and are connected to the foam material layer at their bases in such a way that troughs, rounded-off in the form of a wave line, are produced between the consecutive ribs. 55 60

9. A cover band conveyor substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

For the Applicants:

BARLOW, GILLET & PERCIVAL,
Chartered Patent Agents,
94, Market Street, Manchester, 1.
and
20, Toaks Court, Cursitor Street,
London, E.C.4.

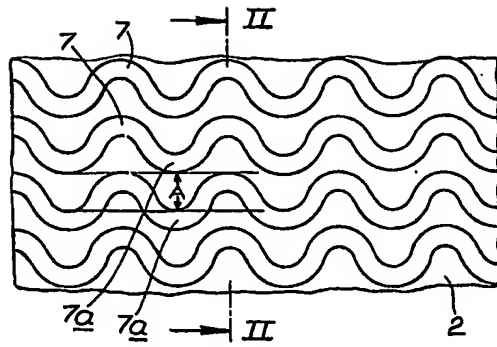


Fig. 1.

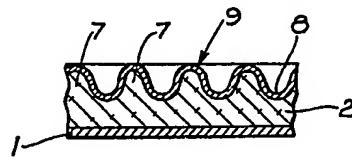


Fig. 2.